



## Geologic Hazards Science Center

# Hazard Curve Application

### Information About the Application

This web application provides access to hazard curves generated for the 2008 National Seismic Hazard Mapping Project (NSHMP). In addition to supplying curve data, the application also presents two alternate views:

1. Uniform Hazard Response Spectra (UHRS)
2. Annual Frequency of Exceedence (AFE) vs Site Class

Whereas UHRS gives the range of probabilistic ground motions across various shaking frequencies, AFE vs Site Class gives the range of probabilities of exceeding a ground motion across a range of site classes. These alternate data views allow users to compute custom ground motion levels and probabilities, respectively. Application instructions and additional help are available in the "Help & Info" tab of the application.

**Programmatic Access:** The hazard curves supplied by this application may be retrieved programmatically in CSV, XML, and JSON formats. See the "Data Access" tab in the application for instructions on how to construct the required URLs.

**Note:** The application provides access to most hazard curves generated for the conterminous US, but not all. The 2008 hazard model treats the Eastern and Western US independently with an area of overlap between longitude -110° and -115° (Data extent maps may be enabled in the "Set Location" tab of the application). The separation exists, in part, because different ground motion prediction equations (GMPEs) are used in each region. The only NEHRP site class common to the GMPEs of each region is the BC boundary and the only spectral periods common to each are PGA, 0.1, 0.2, 0.3, 0.5, 1.0, and 2.0 seconds (A table of the site classes and periods available in each region is provided in the "Help & Info" tab of the application). In the area of overlap, the hazard from the Eastern and Western models is combined for the common site class and periods. This results in the potential for a set of curves to be returned by the application for which different source models were used. For example, if all PGA curves were returned for Salt Lake City, UT, site class A would reflect the Eastern model, site class BC the combined Eastern and Western models, and all other site classes the Western model. To avoid confusion, we restrict the data returned for locations between longitude -110° and -115° to the National model.

### References

Petersen, M.D., A.D. Frankel, S.C. Hamsen, C.S. Mueller, K.M. Haller, R.L. Wheeler, R.L. Wesson, Y. Zeng, O.S. Boyd, D.M. Perkins, N. Luco, E.H. Field, C.J. Wills, & K.S. Rukstales (2008), "[Documentation for the 2008 Update of the United States National Seismic Hazard Maps](#)," U.S. Geological Survey Open-File Report 2008-1128, 61 p.



Launch Application

Version 1.0.1

Application last updated on 2012-07-16. For more information, please [view the list of recent changes](#).

### Frequently Asked Questions

Do you have a question about the application and its data, or a suggestion for improvement? Check our list of [Frequently Asked Questions](#), then [contact us](#).